

**Notice of Allowability**

Application No.

09/989,803

Examiner

Jonathan G. Sterrett

Applicant(s)

TSAO ET AL.

Art Unit

3623

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11-20-01.
2. ☒ The allowed claim(s) is/are 1-36.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

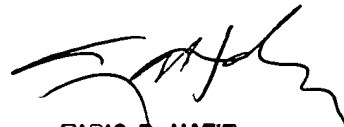
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 1-29-02
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**TARIQ A. HAFIZ**  
 SUPERVISORY PATENT EXAMINER  
 TECHNOLOGY CENTER 8000

**Examiner's Amendment**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark Marcelli, Reg No. 36,593 on March 3, 2006.

2. The amended Abstract is attached:

3. The Claims are amended as follows:

What is claimed is:

5. (Currently Amended) The method of claim 1, said Fully Support Demand Record being a customer record that is being equal to the Minimum Support record of said customer.

18. (Currently Amended) A computer implemented system matching supply and demand between customer forecast demands and semiconductor foundry manufacturing capacity, comprising ~~function of~~:

(1) ~~[[a]] Sales Demand Forecast Data function,~~ Record means for dividing said Sales Demand Forecast Data Record into categories:

- (i) a Minimum Support record;
- (ii) a Maximum Support record;

(2) ~~an Order Data function,~~ Record means for creating a Historical Support record or HS, using the Order Data as input to this function;

(3) ~~a function,~~ means for using said Minimum Support record and said Maximum Support record and said Historical Support record as input records, dividing said three records into:

- (i) Fully Support record;
- (ii) Initial Condition record; and
- (iii) Expected Support record;

(4) a means for determining current salable capacity data and future capacity plan data ~~function~~ record;

(5) ~~a function~~ means for providing a Customer Profiling Model Data Record, said Customer Profiling Model Data Record being sub-divided into categories of:

- (i) Customer Ranking;
- (ii) New Super Stars; and
- (iii) Planned or Intended Technologies of the foundry;

(6) ~~a function~~ means for providing a Product Profiling Model record, said Product Profiling Model comprising indexes:

- (i) "Hot" Products; and

(ii) Market Trend;

(7) ~~a function~~ means for assigning a weight to each demand, said weight to each demand being:

(i) a Fully Support Demand pool;

(ii) an Initial Condition Demand pool; and

(iii) an Expected Support Demand pool;

(8) ~~a function~~ means for using a Demand-Supply matching algorithm, dividing submitted demands of Fully Support Demand pool, Initial Condition Demand pool and Expected Support Demand pool into Supported Demand and Non-supported Demand, said algorithm being an arbiter in deciding which demand will be supported first, whereby the Demand-Supply matching algorithm stops selection or assignment of salable capacity after all salable capacity has been assigned or consumed; and

(9) ~~a function~~ means for combining Supported Demands and Non-supported Demands, provided by the Demand-Supply matching algorithm, using an Index/Reporting Function, making combined results available to foundry management, thereby monitoring and adjusting of foundry production with orders placed, said monitoring and adjusting by means of an input device to the customer profiling model and the product profiling model, indexes of the Customer Profiling Model and the Product Profiling Model being adjustable

by management.

19. (Currently Amended) The system of claim 18, said ~~function~~ means for providing Minimum Support record comprising a customer commitment of placing an order for a minimum quantity of semiconductor devices.

22. (Currently Amended) The system of claim 18, said Fully Support Demand Record being a customer record that is ~~being~~ equal to the Minimum Support record of said customer.

29. (Currently Amended) The system of claim 18, said Product Profiling Model identifying a value of each new product, including indexes to help top management and sales managers to point out a market trend in a near a future and future products that are expected to be in demand.

32. (Currently Amended) The system of claim 18, said weight assigned to each demand comprises assigning a weight in accordance with management and operational principles and guidelines that have been established by a foundry, whereby each demand ~~searches~~ provides means for searching for items in the profiling indexes, that is the Customer Profiling Model and the Product Profiling Model, a demand meeting a criteria in these indexes being assigned a weight belonging to this index, said

weight reflecting impact of the demand on a foundry.

34. (Currently Amended) The system of claim 18, ~~additionally~~ further comprising means for using the MSD system as a simulation tool, establishing different versions of the Customer Profiling Model and the Product Profiling Model, creating comparative reports of various different versions, assisting management in identifying required alternate approaches of matching production capabilities with sales demand.

35. (Currently Amended) The method of claim 1, said Customer Profiling Model being provided and maintained by the MSD system in order to identify the value of each customer, said Customer Profiling Model comprising indexes to help top management and sales managers to identify relationships between customers, the major technologies of the foundry and the potential new start-up customers, said Customer Profiling Model including indexes of Customer Ranking reflecting the weight of a customer to the foundry, New Super Stars reflecting a foundry evaluation of the potential of a start-up design house and providing adequate capacity to these start-up design houses while assigning a weight to all start-up design houses, Planned or Intended Technologies of the foundry reflecting the foundry evaluation of whether a customer can

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transfer customer product to an intended technology of the foundry whereby product that is most likely to switch to advanced technology the foundry will be supported first while different or ~~none~~ non-transferable technologies in this index will be assigned a different weight.

36. (Currently Amended) The system of claim 18: said Customer Profiling Model being provided and maintained by the MSD system in order to identify the value of each customer, said Customer Profiling Model comprising indexes to help top management and sales managers to identify relationships between customers, the major technologies of the foundry and the potential of new start-up customers, said Customer Profiling Model including indexes of Customer Ranking reflecting the weight of a customer to the foundry, New Super Stars reflecting a foundry evaluation of the potential of a start-up design house and providing adequate capacity to these start-up design houses while assigning a weight to all start-up design houses, Planned or Intended Technologies of the foundry reflecting the foundry evaluation of whether a customer can transfer customer product to an intended technology of the foundry whereby product that is most likely to switch to advanced technology of the foundry will be supported first while different

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or none non-transferable technologies in this index will be assigned

a different weight.

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### ABSTRACT

A new software support system is defined, which provides an efficient system of balancing demand versus supply in order to achieve maximum possible revenue in combination with the best possible customer ~~serve~~ service, this in accordance with semiconductor manufacturing principles and conventions of business operation.

### **Detailed Action**

1. An examiner's amendment to the record is attached to this Office Action. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark J Marcelli Reg. 36,593 on 3 March 2006.

2. Examiner amends **Claims 5, 18, 19, 22, 32 and 34-36**. Currently **Claims 1-36** are pending in the application. Examiner amends the Abstract to the Specification.

See attached Examiner's Amendment.

### ***Reasons for Allowance***

3. The following is an examiner's statement of reasons for allowance:

None of the prior art of record, taken individually or in any combination, teach, inter alia, matching supply and demand between customer forecasts and production capacity by dividing the demand data into a minimum and maximum support record, combining the minimum and maximum support record with historical demand data; providing profiling data of customers comprising categories of their ranking as customers, new emerging customers, planned foundry technologies; assigning a weight to each customer's demand of a fully supported demand pool, initial condition demand pool and an expected support demand pool; and using a demand-supply matching algorithm to determine which demand will be supported and which will not be

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supported based on the salable capacity of the foundry; monitoring the supported and non-supported demand by a reporting function for management's use where the monitoring is feed into a customer and product profiling model to adjust these models as determined by management, as recited in independent **Claims 1 and 18**.

The novelty of the invention is in the combination of the limitations cited in independent **Claims 1 and 18** and not in any specific individual claim limitation.

The prior art reference most closely resembling the applicants claimed invention is Huang. While Huang discloses matching supply and demand it lacks determining supported versus unsupported demand using three records of data, where the records of data are fully supported demand, initial condition demand and expected support demand, as recited in **Claims 1 and 18**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6151582 by Huang discloses the management of a supply chain.

US 6993494 by Boushy discloses resource price management using indirect value.

US 6965868 by Bednarek discloses sales agent assisted commerce, in a networked economy.

US 6889197 by Lidow discloses a supply chain architecture.

US 6085164 by Smith discloses a method of allocating flight resources based on current market value.

US 5963919 by Brinkley discloses a strategy method for managing inventory.

US 5765143 by Sheldon discloses a method and system for inventory management.

US 5369570 by Parad discloses a method for continuous resource management.

US 5265006 by Asthana discloses a partial carrier load planning system for the transportation industry.

JP 62120961 A by Teramoto discloses a method of allocating production quantities.

Business Editors/Computer Writers, "AutoSimulations Introduces Static Capacity Modeler: For Rough Cut Capacity and Investment Analysis", Dec 14, 1998, Business Wire, p.1, ProQuest ID 37091576.

Bermon, Stuart; Hood, Sarah Jean; "Capacity Planning Optimization System (CAPS)", Sept/Oct 1999, Interfaces, ABI/INFORM Global, pp.31-50.

Roberts, Bill; "Creating a Virtual Factory", Nov 1, 1999, Internet World, Vol. 5, Iss. 32, p.48, ProQuest ID 46081947.

"PRI Scheduling Software Selected by TSMC at Fab 5", February 16, 1999, PRNewswire, New York, p.1, ProQuest ID 38981281.

Swaminathan, Jayashankar M; Smith, Stephen F; Sadeh, Norman M; "Modelling supply chain dynamics: A multiagent approach", Summer 1998, Decision Sciences, 29, 3; ABI/INFORM Global, p.607.

Wah, Louisa; "ULTIMATE Manufacturing", Sep 1999, Management Review, 88, 8, ABI/INFORM Global, p.14.

PRNewswire, "History meets the future at Stora with the Addition of Logility Value Chain Solutions", March 23, 1998, P0323ATM012, Dialog 05525057 48374065.

Onwubolu, Godfrey C.; Mhlanga, Samson, "POM: a highly visual production and operations management environment", 1997, Industrial Management + Data Systems, v97n3, pp.99, Dialog 02398052 117542211.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TARIQ R. HAFIZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600